Patent

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RIGID SLATS SUPPORTED UNDERWATER BY FLOATING INFLATED SACKS

Filing History

This application is a continuation-in-part of application serial number 09/751,784 filed on December 29, 2000 and application serial number 10/384,690 filed on March 11, 2003 and application serial number 10/682828 filed on October 10, 2003.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to the field of recreational equipment for supporting people in the water. More specifically, the present invention relates to an underwater platform structure comprised of a series of rigid slats, supported by rigid aluminum tubes extending all the way from said slats to inflated sacks with cushioned surfaces floating on the water surface on opposite sides of said slats.

SUMMARY OF THE INVENTION

A main object of the present invention is to provide a safe and comfortable recreational platform structure for supporting people above the surface of the water and also under the surface of the water. The apparatus includes two cushioned above the water platforms on opposite sides of one rigid underwater platform. The rigid underwater platform is supported by a rigid aluminum structure secured to opposite inflatable sacks floating on the water surface.

Yet another object of the present invention is to provide a lightweight apparatus which can be disassembled and compacted for transportation to the beach or lake in, for instance, the trunk of a car or the bed of a pick-up truck.

BRIEF DESCRIPTION OF THE DRAWINGS

The object, advantage and features of the invention will become apparent to those skilled in the art from the following discussion taken in conjunction with the following drawings, in which:

FIGURE 1 shows a rigid aluminum segment 2 having a grip 3 and a circular ring 19.

FIGURE 2 shows a joint 4 with side openings which serve to connect segment 2 with another similar rigid aluminum segment 6.

FIGURE 3 shows cylindrical aluminum segments 2 and 6 interconnected by joints 4 to form two pairs of rigid side arms 7.

FIGURE 4 is a close up of joint 4 connecting segments 2 and 6.

FIGURE 5 shows rectangular-like inflatable sacks 8 with inner longitudinal passages 10 across their width. The inner longitudinal passages end on C-shaped recesses 11 on the long sides of said sacks.

FIGURE 6 shows how connected segments 2 and 6 can be snugly fitted inside inner longitudinal passages 10 to assemble sets of inflatable sacks 8.

FIGURE 7 shows a series of rigid slats 44 joined together by two pairs of elastic bands 101. The slats can be made of aluminum. The elastic bands secure the slats to one another in different positions, including that shown in FIGURE 7, where the slats appear aligned side by side to comprise a straight sheet of aluminum.

FIGURE 8 shows slats 44 secured together by the two pairs of elastic bands 101, but in folded or rolled form for compact and convenient storage and transportation.

FIGURE 9 shows slats 44 as they form a flat and rigid surface secured by elastic bands 101 and also a pair of rigid parallel aluminum tubes 102 secured underneath said slats. Aluminum tubes 102 are also connected to perpendicular aluminum tubes 87 which are connected further to circular aluminum rings 18.

FIGURE 10 additionally shows four separate short rigid aluminum segments 22 secured to circular rings 18. Short rigid segments 22 are passed through said circular rings 18 and secured thereto with pins 20.

FIGURE 11 further shows a set of three inflatable sacks 8 connected to a side of slats 44 and a second set of three inflatable sacks 8 secured to an opposite side of said slats 44. Slats 44 are all shown at approximately the same level as the sets of inflatable sacks 8 on opposite sides of the apparatus.

FIGURE 12 finally shows the complete apparatus 50, which includes four additional rigid segments, namely, long rigid segments 28, secured on top of short rigid segments 22.

FIGURE 13 shows the apparatus 50 as it is deployed for use, with tubes 102 and 87 and slats 44 lowered a few feet under inflatable sacks 8 to provide a recreational underwater platform, as said inflatable sacks float on the water surface, providing cushioned above the water platforms on opposite sides of said slats and stability to the entire apparatus.

FIGURE 14 shows a small inflatable sack 149 attached underneath tubes 102 and 87 and slats 44. Sack 149 is equipped with an air hose 167, which is then connected to an air pump 168 out of the water. This optional accessory serves to inflate a sack underwater to readily lift the underwater platform from beneath the water surface.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

As required, detailed embodiments of the present invention are disclosed herein. However, it is to be understood that the disclosed embodiments are merely exemplary of the invention which may be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriately detailed structure.

Reference is now made to the drawings, wherein like characteristics and features of the present invention shown in the various FIGURES are designated by the same reference numerals.

FIGURE 1 shows an aluminum segment 2, consisting of a hallow rigid tube having a cylindrical shape, a circular ring 19 on one end and a grip 3 on the other end.

FIGURE 2 shows joint 4 with side openings, one of which can be used to insert grip 3 of segment 2 and secure it thereto.

FIGURE 3 shows that grip 3 of cylindrical hallow tubes or rigid segments 6 can likewise be inserted inside an opposite side opening of joint 4, to assemble a pair of rigid side arms 7, with combinations of aluminum segments 2 and 6.

FIGURE 4 shows how grip 3 of segments 2 and 6 is locked inside joint 4. Each grip 3 has a pin 64 which retracts inside grip 3 as a spring 65 is pressed. As the spring then returns to its normal extended position, pin 64 locks grip 3 inside a central chamber on joint 4.

FIGURE 5 shows a set of three identical rectangular-like inflatable sacks 8. Each inflatable sack 8 has two separate inner longitudinal passages 10 across its width, which end on C-shaped recesses 11 on the long sides of said sacks. The longitudinal passages 10 are shown generally parallel with their counterpart passages but spaced not so distantly to be adequately separated from the edges of the short sides of said rectangular-like sacks.

FIGURE 6 shows how connected rigid segments 2 and 6 can be snugly fitted inside inner longitudinal passages 10 to assemble sets of side by side inflatable sacks 8, with said rigid aluminum segments 2 and 6 located well underneath the cushioned surfaces of said sacks when inflated. Circular rings 19 at the end of the pair of rigid side arms 7 (formed by connected segments 2 and 6) are located within C-shaped recesses 11 and thus do not protrude beyond the main periphery of said rectangular-like sacks. Joints 4 connecting rigid segments 2 and 6 are also shown within opposing C-shaped recesses 11.

FIGURE 7 shows a series of rigid slats 44 joined together by two pairs of elastic and parallel bands 101. The slats can be made of aluminum. As shown in this

FIGURE the elastic bands secure the slats side by side to comprise a straight aluminum sheet. The elastic bands thus allow the rigid slats to be readily positioned in horizontal alignment.

FIGURE 8 shows the series of rigid slats 44 no longer in horizontal alignment but rolled up as elastic bands 101 hold them together. This rolled or folded position of slats 44 facilitates their storage and transportation when not in use.

FIGURE 9 shows slats 44 as they form a flat and rigid surface secured by elastic bands 101 and also a pair of rigid parallel aluminum tubes 102 removably secured underneath said slats by suitable fasteners (e.g., screws). Tubes 102 are interconnected to four perpendicular rigid tubes 87, also underneath slats 44. Each of the four perpendicular tubes 87 is then connected to a circular ring 18. Aluminum tubes 102 rigidly support slats 44, so that the set of slats comprise a flat and firm underwater surface, even as people stand or walk over it. But as said aluminum tubes 102 are removed and said slats 44 are again joined together only by the two pairs of elastic bands 101, the slats can be rolled up as previously shown in FIGURE 8.

FIGURE 10 additionally shows four separate short rigid aluminum segments 22. Each said rigid segment 22 is secured to a different circular ring 18. Short rigid segments 22 are passed through circular rings 18 and removably secured thereto with pins 20 passing through holes 90.

FIGURE 11 shows a set of three inflatable sacks 8 and a pair of rigid side arms 7 connected to a side of slats 44 and another set of three inflatable sacks 8 and a pair of rigid side arms 7 secured to an opposite side of said slats 44. The slats and the two sets of inflatable sacks are all shown connected at approximately the same level. Slats 44 are connected between the pairs of side arms 7 and the two sets of inflatable sacks 8 with short rigid segments 22, which secure circular rings 19 and 18. Each one of the four short rigid segments 22 passes through a circular ring 19 (of segments 2 of side arms 7) and a circular ring 18 (of perpendicular tubes 87), and is removably secured thereto with upper pins 58 and lower pins 20, which rest on corresponding holes 98 and 90. Upper pins 58 thus secure short rigid segments 22 to circular rings 19 while lower pins 20 secure the same short rigid segments to circular rings 18. Circular rings 18 are located underneath circular rings 19.

FIGURE 12 then shows the apparatus 50, which includes four additional rigid segments, namely, long rigid segments 28, which are secured over short rigid segments 22 and are in essence a long rigid extension of said short rigid segments.

FIGURE 13 shows the apparatus 50 as it is deployed for use, with slats 44 aligned horizontally and lowered a few feet under inflatable sacks 8 to provide a recreational underwater platform, while said inflatable sacks float on the water

surface, providing cushioned above the water platforms on opposite sides of said slats and also support and stability to the entire apparatus. The lowered slats give people the opportunity to stand or walk over a flat and firm surface with their lower bodies under the water. To lower slats 44 as shown in this FIGURE the four upper pins 58 are removed from corresponding holes 98 so that short and long rigid segments 22 and 28 can slide downward. Upper pins 58 are thus shown in FIGURE 13 resting on holes 99 (not 98) in the upper end of long rigid segments 28. Holes 99 are located immediately under stopper 29 on top of long rigid segments 28. However, long rigid segments 28 could also have other intermediate holes (not shown) between holes 99 and 98, where pins could rest to hold the underwater platform at an intermediate depth. Stoppers 29 are designed to stop the downward slide of short and long rigid segments 22 and 28 so that upper pins 58 can be more easily introduced on holes 99.

FIGURE 14 shows a small-sized inflatable sack 149 underwater, underneath lowered slats 44 and tubes 102 and 87. This small inflatable sack is optional and has a flexible air hose 167 connected to an air pump 168 out of the water. Inflatable sack 149 is designed to remain deflated while apparatus 50 is deployed for use and is intended to be inflated only to facilitate the lifting of the underwater platform (comprised of slats 44, elastic bands 101, and tubes 102 and 87) from beneath the water surface, once upper pins 58 are removed from holes 99.